WHAT IS CLAIMED IS:

1. An image contour extraction method comprising the steps of:

inputting image data and shape data which is a
5 binary image representing a provisional region of an object in the image data;

reducing the image data and the shape data;

performing coarse contour position correction on the basis of the reduced image data and shape data to
10 coarsely bring a contour of the shape data close to a contour of the image data; and

performing main contour position correction to match the contour of the shape data to the contour of the image data on the basis of the image data and the coarsely
15 adjusted shape data obtained by the coarse contour position correction,

wherein the coarse contour position correction includes arranging a plurality of search reference blocks, each having a first size, on the contour of
20 reduced shape data, searching, for each of the search reference blocks, the reduced image data for a similar block having a texture similar to that of the search reference block and having a second size larger than the first size, and replacing all the search reference
25 blocks with correction shape data obtained by extracting data of the similar blocks from the reduced shape data and reducing the data to the first size, and

the main contour position correction includes arranging a plurality of search reference blocks, each having a third size; searching, for each of the search reference blocks, the input image data for a similar

5   block having a texture similar to that of the search reference block and having a fourth size larger than the third size, and replacing all the search reference blocks with correction shape data obtained by extracting data of the similar blocks from the shape

10   data and reducing the data to the third size.

2.   A method according to claim 1, wherein the coarse contour position correction is repeated a plurality of number of times, and the size of the search reference block is decreased as the coarse

15   contour position correction is repeated.

3.   A method according to claim 1, wherein the coarse contour position correction comprises limiting a similar block search range to a direction perpendicular to a direction of a contour of shape data in a search

20   reference block.

4.   An object extraction method comprising the steps of:

comparing each portion of first image data obtained by capturing an extraction object with another

25   portion of the first image data or second image data, thereby generating shape data as an image representing a provisional region of the extraction object in the

first image data; and

matching a contour of the shape data to a contour of the extraction object by using the first image data and the provisionally generated shape data.

5.   A method according to claim 4, wherein the shape data generating step comprises determining a plurality of candidate regions in advance and, when the candidate regions are selectively set in the first image data, setting a candidate region, as a provisional region of the extraction object, which exhibits a largest difference between a statistical characteristic of inside pixel values and that of outside pixel values.

6.   A method according to claim 4, wherein the shape data generating step comprises comparing current input image data corresponding to the first image data with background image data corresponding to the second image which is acquired in advance without capturing the extraction object, and setting a region in which the current input image data differs in value from the background image data as a provisional region of the extraction object.

7.   A method according to claim 4, wherein the first step comprises holding image data of a frame from which a region of the extraction object has already been obtained and shape data as reference image data and reference shape data, respectively, performing

motion detection with respect to the current input
image data corresponding to the first image data by
referring to the reference image data, and performing
motion compensation for the reference shape data on the
basis of the motion detection result, thereby
generating the provisional shape data.

8. An object extraction method comprising the
steps of:

inputting image data and shape data as an image
representing provisional regions of extraction objects
in the image data;

arranging a plurality of search reference blocks,
each having a first size, on a contour portion of the
shape data;

searching the same image for a similar block, for
each of the search reference blocks, which has a
texture similar to that of the search reference block
and a block size larger than that of the search
reference block; and

replacing shape data in each of the search
reference blocks with correction shape data which is
obtained from a corresponding one of the similar blocks
and has undergone size correction by reduction
processing,

wherein the shape data has different pixel values
in an object region and a background region which
differ from each other, and

the reduction processing in the replacing step uses a pixel value of one of pixels around a sampling point of the shape data as a sampling value.

9. An image contour extraction method comprising the steps of:

displaying an original image on a display screen on the basis of original image data;

manually setting a rough contour of an object displayed on the display and generating shape data corresponding to the rough contour; and

performing contour position correction by a self-affine mapping technique to match an actual contour of the object to the rough contour,

wherein the contour position correction includes performing reduction processing for the original image data and shape data to obtain a reduced original image and reduced rough contour obtained by reducing the original image and rough contour, and performing coarse contour position correction by the self-affine mapping technique using the reduced original image data and shape data, thereby coarsely bringing the rough contour close to the contour of the original image, and performing main contour position correction by the self-affine mapping technique using the coarsely adjusted shape data and original image data obtained by the coarse contour position correction, and matching the rough contour to the contour of the original image.

10. A method according to claim 9, wherein the coarse contour position correction comprises the steps of arranging a plurality of search reference blocks, each having a first size, on the reduced rough contour, searching, for each of the search reference blocks, the reduced image data corresponding to the search reference block for a similar block having a texture similar to that of the reduced original image and a second size larger than the first size of the search reference block, and replacing all the search reference blocks with correction shape data obtained by extracting data of the similar blocks from the shape data and reducing the data to the first size.

11. A method according to claim 10, wherein the main contour position correction comprises the steps of arranging a plurality of search reference blocks, each having a third size, on the rough contour, searching, for each of the search reference blocks, the original image data corresponding to the search reference block for a similar block having a texture similar to that of the original image and a fourth size larger than the third size of the search reference block, and replacing all the search reference blocks with correction shape data obtained by extracting data of the similar blocks from the rough contour and reducing the data to the third size.

12. A method according to claim 9, wherein the

coarse contour position correction comprises the step
of obtaining a 1/2 reduced original image by reducing
the original image and rough contour to 1/2.

13.   A method according to claim 9, wherein the
coarse contour position correction is repeated a
plurality of number of times, and a size of the search
reference block is decreased as the coarse contour
position correction is repeated.

14.   A method according to claim 9, wherein the
coarse contour position correction comprises limiting a
similar block search range to a direction perpendicular
to a direction of a contour of shape data in a search
reference block.

15.   A method according to claim 9, wherein the
coarse contour position correction comprises reducing a
block size of a search reference block to 1/2
vertically and horizontally, checking whether the
reduced block size of the search reference block is
smaller than a reference value, and advancing the main
contour position correction if the block size is
smaller than the reference value and returning to the
reduction step if the block size is not smaller than
the reference value.

16.   A transmission system comprising a server and
client which mutually transmit/receive
transmission/reception data,

said client including:

an object extraction section which obtain
extracted image data by extracting an object from image
data obtained by capturing an extraction object,

a client transmission section which transmits the
5   extracted image data as down stream
transmission/reception data to said server without any
change or upon compression,

a client reception section which receives upstream
transmission/reception data sent from said server and
10   handles the transmission/reception data as image data
if the data is not compressed, and reproduces the image
data if the data is compressed, and

a display which displays the image data, and
said server including:
15   a server reception section which receives the
downstream transmission/reception data, handles the
transmission/reception data as extracted image data if
the data is not compressed, and reproduces the
extracted image data if the data is compressed,
20   a composite section which synthesizes the
extracted image data with one composite image data, and
a server transmission section which transmits the
composite image data as the upstream
transmission/reception data without any change or upon
25   compression.

17.   A transmission system comprising a plurality
of communication terminals for mutually

transmitting/receiving transmission/reception data,

said communication terminal including:

an object extraction section which obtains

extracted image data by extracting an object from image

5 data,

a transmission section which transmits the

extracted image data as inter-communication-terminal

transmission/reception data to another communication

terminal without any change or upon compression,

10 a reception section which receives the

inter-communication-terminal transmission/reception

data sent from another communication terminal, handles

the transmission/reception data as extracted image data

without any change if the data is not compressed, and

15 reproduces the extracted image if the data is

compressed,

a composite section which synthesizes the

extracted image data with one composite image data, and

a display which displays the composite image data.